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ABSTRACT

This volume contains summaries of the five general sessions of a forum designed to examine the role of American institutions of higher education in preparing for the future. Titles and speakers for the summarized presentations include: "Pacific Century? Global Century? or No Century?" (James Dator, Jeffrey Holmes, Helmut de Ridder, and Chen Jia Sheng); "Developing Prototypical Universities for the Twenty-First Century" (George Johnson and Stephen Trachtenberg); "The Silicon Foundations under Our Twenty-First Century Ivory Towers" (Robert Heterick, Jr. and Jane Ryland); "Higher Education Policy Issues: An International Perspective" (James Dator, Elaine El-khawas, Helmut de Ridder, and William Taylor); and "Urban Colleges and Universities: The Special Challenges Ahead" (Rafael Cortada and George Vaughan). An address by Lawrence Sherr presented at the presidential session and entitled "Is There a Better Way to Manage Higher Education?" concludes the document. (JDD)

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AIR

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# Higher Education and the Future: Initiatives for Institutional Research

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General Session Presentations
29th Annual Forum
Association for Institutional Research
Baltimore, Maryland April 30-May 3, 1989

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## INTRODUCTION FROM THE FORUM CHAIR

*In keeping with tradition, the Twenty-Ninth Annual Forum for the Association for Institutional Research reflected strong programming, provided opportunities for meeting old and new colleagues, and generated an atmosphere conducive to professional development. As in the past three years, contributed papers, panels and demonstrations were organized by functional tracks designed to mirror the interests, roles and responsibilities of AIR members. In addition, professional development opportunities at the Forum were supported by general sessions, workshops, practica and Special Interest Group meetings.*

*Contained in this volume are summaries of the general sessions. Unlike past Forums, five general sessions were presented, three held concurrently on Tuesday morning. At each session, the speakers addressed a different aspect of the Forum theme: "Higher Education and the Future: Initiatives for Institutional Research". At the Presidential Session, Dr. Larry Sherr highlighted the management principles used by the Japanese to build their present economic position in the world and how such principles can be used in higher education management.*

*The general session presentations summarized in this volume provide a snapshot of the issues that were raised and discussed at the Forum. I encourage you to attend the Thirtieth Forum in Louisville to discuss issues related to "Institutional Research - - Coming of Age".*

Richard D. Howard

*Richard D. Howard*
*Forum Chair*

**Pacific Century? Global Century? or No Century?**
(opening general session)

**Guest**
James A. Dator
World Futures Studies Federation

**Press**
Jeffrey Holmes
Institute for Research on Public Policy (Canada)

Chen Jia Sheng
Liaoning University
(Peoples Republic of China)

Helmut de Rudder
University of Luneburg (Germany)

*Recorder: Mary Sapp, University of Miami*

(This is an edited record and commentary of an address presented in the Omni Ballroom of the Omni Inner Harbour Hotel, in Baltimore, Maryland, on Sunday April 30, 1989.)

**Dator:**
My thesis is a very simple one. Universities and colleges are simply not able to play a positive role in helping citizens face the future effectively. I don't think there is anything that can be done about it, and I am challenging you to prove that I am wrong.

There are five components of the future, those things that:

1. Are the same as the past, the same as the way it has always been.
2. Will be the same as the present but which may have some novelty or characteristics that have not always been here.
3. Result from rising or falling trends from the present.
4. Are utterly new, that have never happened before, that are not happening now but which we are capable of anticipating to some extent.
5. Are utterly new but which we will not anticipate.

Our universities focus on the first and the second components for the most part. From my point of view, we should focus primarily on the third and fourth components.

Five trends or aspects are creating the future:

1. The aging, yellowing, browning, and blackening of North America and the world.
2. The end of economics.
3. The United States as an ordinary nation i.e. the demise of the nation-state system.
4. The death of nature and the invention of a wholly artificial world.
5. The creation of post-homo sapiens.

I have challenged individuals such as yourselves who are in a space, a very precious space between spineless administrators and mindless academicians, to try to help universities face the future, but I will say that I am as pessimistic now as I was a year ago when I made a similar presentation to the Society for College and University Planning (SCUP) in Toronto. I do not think you will do it.

I will end with two things that have changed in the past year which have only served to emphasize different aspects of what I have said but not to alter my thesis.

I think that our environmental concern and awareness have increased over the past year, partly as a consequence of a very hot and dry summer which made us think about the consequences of the "greenhouse" effect. The good ship Exxon further heightened our awarenesses.

Secondly, our progress towards the dissolution of the nation-state system continues, as does the progress of globalization.The changes in the Soviet Union, Eastern Europe, and China are occurring faster than I anticipated. The events in these countries indicate the tremendous inabilities of large nation states to deal with the problems that are actually larger, and smaller, than any nation state is capable of dealing with. Finally, our awareness of the changes in the economy and political structures arising from the Europe of 1992 is important.

**de Rudder:**
Given the complexity of the real world and the problems of analyzing it adequately, how can you arrive at your super global generalizations cutting across almost all academic disciplines?

I disagree with your methodological approach. How can you mix the analytical, the normative, and the prescriptive along with your personal opinions and value judgments?

Finally, how can anyone learn from the future? You can only misjudge the future if you don't study what has happened so far. Quoting from my cultural heritage, "Not to know what happened before one's birth means maiming a child forever."

**Chen:**
We should make the definition of economics clear. Economics is the study of how society decides on what to produce and distribute. The "economics" problem will always be there.

**Dator:**
Let me respond by outlining the methodology of future studies and the bases for my particular statements. It would be a big mistake to assume that any member of the World Futures Studies Federation believes that he/she knows or can know or ever will know exactly what the future will be. The Futures Federation is trying to study not the future but ideas, images about the future. These are important in and of themselves but primarily because people act in the present, in large part, on the basis of what they think the consequences of those actions will be. It is images of the future and what people think the consequences of their actions will be in terms of impacting upon the future that the Federation is trying to study. We don't believe that

it is possible ever to find a method or theory that will accurately predict what the future will be.

These images will vary, by culture, class, and age groups. Understanding why they differ, the components of these images, and the ways in which these images serve to cause us to act at the present time are the major things that we as a Federation try to do. What I have done here tonight is present not my ideas but my attempt to put together some of the ideas that have come from many other people involved in future studies around me.

One of the questions you raised is the inner mix that you saw of scientific perspectives with normative concerns with a highly synthetic transdisciplinary, transcultural approach. That is absolutely true. I believe that one of the problems that we currently have in our academic work is the failure to be sufficiently broad, to recognize the value assumptions in our so-called scientific perspectives.

On the question of economics, it is no longer a problem for humanity to produce and distribute commodities fairly. This is a consequence of automation, robotization, and general use of technologies such as biotechnology. Production and distribution of goods is already a trivial activity and certainly will not be one that will command much attention in the way that it has historically, but we have enormous problems ahead, demanding attention to which economics may or may not be able to contribute. Many of these are in the area of environmental problems and problems where humans will not be engaged in the production and distribution of goods.

**Holmes:**
My question is, if you leave out the industrial revolution in your analysis, how do we pay for a beautiful biotech future? I know that you are personally happy with medieval times.

**Dator:**
Actually, it is not only the idea of being a medieval monk that I find enormously appealing. I very much like tribal society as well, such as Micronesia. It is very difficult to say that the way we live now is definitely better, but I don't think we can wipe out the past. My concern about history is not that it should not be known but that more of it should be known and that it should be rewritten.

The writing of history is quite important, and one of the things that needs to be rewritten and understood is that primitive human beings were not in a horrible state. If we wanted to focus on anything that we would glorify, it might be tribal societies.

**de Rudder:**
I interpret your presentation as suggesting that we should not study history. Now you are saying we should study more history.

**Dator:**
Let me suggest anthropology instead of history. While I favor a primitive society, it is not a society without technology or concern with technique, but for the purposes at hand, try to focus on solving the problems and the utilization of technology for those purposes.

There are no new homo sapiens. There are post-homo sapiens. I'm neither optimistic or pessimistic about that. It is simply something that we are in the process of doing, creating our own successors, and I believe that homo sapiens or some portion of them will try to linger on in a pure state. I don't think that will happen. I think that there will be a merger of homo sapiens through genetic engineering and artificial intelligence and the development of new intelligent creatures, not just one single strain but many different strains. Using historical analogies, one hominid emerged over competing hominids and survived by destroying the competitors, reigning for a relatively brief period of historical time.

**Chen:**
What can you predict for a country such as China, with its largely uneducated population, as it strives to make cultural and technological advances? And how should those advances proceed? Can they follow the same paths as other developed nations?

**Dator:**
In China, an enormous interest lies in the question as to whether development must be in stages in the way that the West allegedly developed. Are there other ways? Should China model itself after the U.S. or Germany or Japan, or more recently Korea? While attending the World Futures Studies Federation meeting recently in Beijing, the book most often cited to me by the Chinese was Alvin Toffler's The Third Wave. The Chinese were very interested in knowing whether I thought it would be possible to leapfrog the industrial period, as we in the West went through it, in order to find a way of their own.

**Holmes:**
We decided, though, that you can't go from Micronesia to microbiology. You cannot leave a primitive nation to jump by itself; it needs help from the advanced nations.

**Dator:**
I believe that Micronesia can make that leap. I do believe that Micronesia is already closer in lifestyle in many ways to a certain form of post-industrial society where the focus on work for production of goods is no longer the dominating aspect of life and other social concerns are more important. That I believe is the great promise and challenge of the sort of future that arises from the trends I describe.

**de Rudder:**
I agree that the developing nations don't necessarily have to go through all the stages of industrial development as it has been done in Western Europe. But they are still industrial, and that's why it is simply not true to say that the industrial society is dead. Even if they jump into stages of industrial development, such as not re-inventing the steam engine, they have to go through some industrialization in order to solve the economic problems they have, notably redistribution in countries where there is no abundance. Abundance is relative, scarcity is not an absolute quality. It is something relative to the stage of economic development that you are in. The death of economics will not happen.

**Dator:**
Let me put it this way. Biotechnologies have given us very different modes of production, very different energy needs. Economics is simply no longer the driving

force. Economic factors will persist, but they will no longer be prominent. I think it is the case that we have more than enough things to provide goods and services for everyone in the world at the present time, certainly in terms of what is needed. There is no doubt that our desires will continue and that scarcities will continue, but there will be scarcities of a different type. One reason is due to the negatives. The environmental impacts of the old goods and services will change both our consciousness and our way of life. The second reason is that the new technologies will be so abundant that having things will be far less important than being something.

**Holmes:**
I don't think primitive societies can come up with sophisticated inventions. I think they come up with a series of inventions across the world at different times which lead us to these major jumps forward. I do agree with you that if we could tomorrow morning scrap all the nuclear arms in the world, we could ultimately feed another five billion people if we could solve the economic problem.

When I first heard you use the phrase "post-homo sapiens," these super intelligents, I thought in fact you were talking about people, suggesting that if we got smart enough then we could go back to being simple, tribal, caring, and co-operative. Yet you have argued very persuasively that we are not needed. We are, for example, not needed for work. Why then would any super intelligence keep us around? You need something for genetics, but the rest of us you don't need.

**Dator:**
I think you are absolutely right. I was asked recently to give a talk about humanism in a post-industrial age. Why should we be so hung up on ourselves? Why should we be so focused on our own particular way of living? No, that is very definitely one of the real implications of the continuation of the direction we are moving in.

I must make two comments. First, I am not describing these as utopias. Secondly, I would simply re-emphasize that it is a mistake to assume that rationality is the only characteristic that these post-homo sapiens will decide to maximize.

One of the major contributors to this evolution is space travel. As long as we bind ourselves to this planet where we evolved, some of the processes that I described will be a little harder to be effective. But once we do move into space, then I am fairly certain that after a generation or two of trying to make conditions look like Earth, we'll begin to recognize that that mode of colonization never works anywhere else. Evolution will then move in accordance with the needs out there.

**de Rudder:**
Your third point on the U.S. as an ordinary nation needs further discussion. I agree that the role of the U.S. in world politics is changing. The U.S. is still one of the world powers. It is more present in parts of the world than any European country.

Now you said something about 1992. There is no suggestion of having a United States of Europe shortly after 1992 as you are predicting. Europe is still a continent of nations with many economic, cultural, and political differences and a tremendous north/south difference. From what we can see, it is very hard to say what is going to happen in Eastern Europe within the next ten years. I think the changes going on in

countries like Poland, Hungary, and the Soviet Union are more important than what we have seen since the Russian revolution in 1917.

**Dator:**
I think that one of the big problems that we have is the inability to see some of the subtleties and uncertainties in the things that I described in very black and white ways, but it would be a mistake to assume that I was saying that the unification of Europe or its transformation from its current nation-state basis would occur immediately after 1992. The question is more what will happen in the early twenty-first century. Take the Soviet Union, for example, with its attention to the Baltic areas, the recent uprising in Georgia, and all the problems it has with its Islamic southern republics. What I expect to see is a new form of integration which perhaps is similar to the sort of transnationalizing government that we can expect globally in the foreseeable future.

Let me make a comment about the United States. The factors that are contributing to the characterization of the ordinary nation are even more apparent now. The inability of the U.S. federal government to act positively in many arenas supports my contention. What I am more interested in is the ways in which some of our state governors are beginning to exercise foreign policy and are working deals with countries all over the world such as China and Europe. I am not saying that America will necessarily fade away and become normal, but I do think that the role of the nation state, the American state, will be circumscribed primarily because of economic limitations.

I would like to conclude with the following. All of this has been an elaborate plea for future studies as an integral part of what is going on in the academic sphere. I normally ask groups like this how many of you have ever had a formal course in the future and no hands go up. Then I ask how many of you have had a formal course in history, and naturally, all hands go up. If I am anywhere near correct about the role and amount of novelty in the world of our young people compared to that in our own world, let alone that of our grandchildren, then I think we do need to begin to have more courses dealing with the future as a normal part of our academic curriculum. We should think about the possibility of reorienting, in a very substantial and dramatic way, our educational system more towards the future.

***Summary: Sapp***
*During the panel discussion, the question was raised about whether the future really can be known. Dator responded that no futurist knows exactly what the future will be. Rather futurists examine images of the future and consequences of present actions. When questioned about his apparently negative view of how most universities study history in order to prepare students for the future, Dator responded that he is not against the study of history. On the contrary, he stressed that more history should be known and that we should not be afraid to require it in order to broaden our understanding of where we are now. He also suggested that this might better be accomplished through the study of anthropology than of history.*

*As Dator pointed out in his original paper, "one would think that education would be the most future-oriented activity humans can engage in - - except for having and rearing children themselves. What is education for, if it is not the <u>future</u> of our students?" Dator has long argued that "no teacher" should stand up in a classroom*

*and teach anything until she has examined, as thoroughly as she possibly can, all the possible and probable futures her students are likely to live in, and has decided beyond a reasonable doubt that they will need to know what she is about to teach them, compared to other things they might learn instead. Unfortunately, however, "almost no one does that." Dr. Dator argues that, given the amount of novelty that will be in the world of our young people, universities should include future studies as an integral part of the academic sphere.*

*Panelists discussed the role of the industrial revolution and technology. Dator, who personally favors medieval and tribal societies, acknowledged that technology cannot be avoided but argued that we should focus on the application of technology to problems rather than teaching from a disciplinary point of view. The discussion of technology also addressed the question of whether nations without advanced technology have to go through the same stages as the West in order to arrive at the future that Dator forsees or whether they can leapfrog the industrial stage instead. Dator doesn't believe in the "over-determination" of history which implies that third world nations plod behind, never able to catch up until the leaders collapse.*

*The panel also discussed the questions of whether there really can be an end to economics and whether there will ever be an end to scarcity, given the inequitable distribution of goods and given human nature that always wants more. In contrast to the other panelists, Dator argued that to the extent that economics is concerned with the production and distribution of goods, it is now a trivial activity because of technological advances. Furthermore, through biotechnology, we have the possibility to have such an abundance of goods and services that we will be able to meet the needs and wants of everyone. When challenged about his prediction of an imminent unification of Europe, Dator explained that he expects a new unification that will occur by the early twenty-first century rather than immediately after 1992. Such a development would circumscribe the role of the United States.*

*The panelists discussed Dator's prediction of the evolution of post-homo sapiens and a new economic order arising from our movement into space and the new needs that will arise in that environment. The question was raised about whether post-homo sapiens will want to keep homo sapiens around in the future. Dator's reply: "It was a great couple of hundred thousand years - - enjoy it while you can."*

**Developing Prototypical Universities For the Twenty-First Century**
**(general session)**

**Panelists**
**George W. Johnson, President**
**George Mason University**

**Stephen J. Trachtenberg, President**
**George Washington University**

*Commentator:*
*Timothy R. Sanford, The University of North Carolina at Chapel Hill*

**(This is an edited record and commentary of an address presented in the Omni Ballroom of the Omni Inner Harbour Hotel, in Baltimore, Maryland, on Monday morning, May 1, 1989.)**

**Johnson:**
At the outset I should make clear my controlling premise which restates the motto carved in the lintel of the Oracle: "The confession of ignorance is the beginning of wisdom." As a university planner, I simply don't know what I'm doing. I feel free to say so without embarrassment because I don't really see how other people could possibly know what they're doing either. The world in which I must do my planning is one very nearly trackless. The experience of the past, both personal and inherited, provides many warnings but little direction, and my compass of conventional responses has become patently useless. In the last two or three decades our institutionalized society has undergone one dramatic change after another: social, economic, political, and intellectual. Every institution of our institutionalized society has been radically affected by these changes, everyone, that is, except American universities, which have persevered in maintaining the posture of an unmoved mover, godlike in their ability to simply watch the travail of others.

With such dramatic changes going on in society - - in all societies of the globe, for that matter - - it is probably inevitable that there be an erosion of confidence in formal planning. Given the changes in the way we live and in the way we think, it seems to me impossible any longer to have: faith in the kind of central planning which seeks to impose rational constructs on the raw flux of phenomena; faith in linear planning which seeks to extrapolate patterns of yesterday as parameters of what is possible tomorrow; or faith in bottoms-up planning, based on data and/or consensus, which seeks to substitute an array of information or of opinion for the intuitive judgement of the leader.

Those kinds of planning it seems to me have simply stalled out. Witness, for instance, the so-called "death of socialism" which is attracting interest and discussion on both very sophisticated and very unsophisticated levels. What is represented in the popular press as the triumph of capitalism and democracy seems to me to be more nearly a conclusive disillusionment in central planning - - the final collapse of those 19th century scientific assumptions which empowered Darwin, Marx, and Freud. That disillusionment, it seems to me, is marked conveniently by the success of the current bestseller Chaos by the New York Times science writer James Gleick.

Some of my friends in physics caution me that chaos studies simply occupy an interesting corner at the periphery of science. My own instincts tell me instead that chaos studies signal a very important paradigmatic shift in the way we think. Chaos studies concern themselves with the unpredictable behaviour of deterministic dynamical systems - - with the predictably unpredictable behaviour of deterministic systems. When Jay Forester, the computer scientist, told us decades ago that "complex systems respond counterintuitively" he was putting into formulation for the computer age what Robert Burns had said poetically two centuries earlier: "The best laid plans of mice and men gang aft agley." But the fact that he put it in language appropriate to the environment of the computer is significant, because chaos studies really became accessible with the development of more and more powerful machine intelligence. Paradoxically it was the prospect of the kind of enormous computational power which could provide ultimate predictability which helped reveal the ultimate impossibility of such predictions. In Gleick's first chapter, for instance, he discusses Edward Lorenz' realization that no matter how detailed the sensory input and how powerful the computational manipulation one cannot predict the weather; that if we covered the Earth with sensors one foot apart and crunched the resulting data, the results would be quite unreliable as predictions, since the mere perturbation of a butterfly's wings within the confines of a sensored square foot would lead to random perturbations. That we know mathematically that we can predict that a simple system will behave unpredictability seems to be a central paradigm describing the way we live today, and makes peristroika; the political inadequacy of national, state, and local governments; the rain-out of many weekend golf dates, and my own inability to plan in generally accepted ways somehow all of a piece.

In an environment of a fluid dynamical system how does one plan? One doesn't try to predict - - if you have the gift for that sort of thing you belong at the track. One doesn't extrapolate. Instead one tries to position one's organization within the contending vectors of the system, that is, conducting a military operation in a fluid battle zone, identifying the dominant hills and marking out the critical fords. We have to be strategic planners - - to use the buzzword of the last half dozen years. It's probably important, however, to note that most strategic plans in published forms look simply like wish lists. They may go through the workbook steps of assessing strengths and weaknesses, but what they amount to are a list of Christmas wishes for what the institution hopes to achieve. What they lack are any instances of leadership; any explicit judgements regarding those priorities and placements which really make a directed campaign. This is why in my limited experience most political bodies are simply incapable of endorsing any kind of planning which is truly strategic. People in political office cannot accept the responsibility for putting first things first and second things second. Stated more broadly, in a fragmented society, without a clear community of interest, it is difficult if not impossible to achieve a clear vision of real targets and objectives. Within our own institutions, for that matter, notice the difference in the way we prepare for a major capital campaign and the way we prepare our budgets. Capital campaigns are put together strategically, everything becomes clear regarding priorities and positions because the leadership clearly understands what it wants: 100, 200, 500 million dollars. We don't do the same things in academic planning, on the the other hand, because none of us really knows exactly what it is we want.

I am often credited with having "vision." I used to routinely disclaim that attribution, pointing out that I have never indulged in substances which would induce such a phenomenon. I don't really know what my university ought to look like five years from now, or two years from now. I know that at some point in the not too distant future it will in all likelihood look quite unlike what it does today, since the way it looks today - - since that way it is organized and structured, the way it is managed, and the way its instruction is formatted - - is quite clearly an artifact from an industrial age now gone. My university is still modeled on a factory and I seriously doubt that that model will much longer suffice. How one manages such an institution without relying on the semester credit hour mystifies me about as much as it does any of our department chairpeople - - even though that department chairperson often seems unaware that for about 900 years universities did perfectly well without the device. (The semester credit hour is only about a hundred years old and is clearly one of those unit measures that belongs to the industrial model.)

I don't worry about imagining the product of the next year or the next decade. I concern myself with the process. I try to take advantage of fluid situations. I try to position my institution advantageously amid currents of support and opposition. Mine is a "regional university" assigned by the state coordinating council from 10 to 15 years ago with the mission of a third tier service institution. That assignment did not fit the regional environment, and so George Mason became a university immersed really in its community, swimming in the element which is destructive of most of the conventional defenses of institutional integrity. We are identified as an entrepreneurial institution, one that seeks a better surf board rather than a sturdier sea wall. We are supported by that community, its support sufficient to lift our aspirations to those of the national rank. But we are opposed by a state coordinating body and what I will simply refer to as "the establishment." When we decide to launch a new program we do not look to a catalog of accredited modes, elaborate in detail a program of study, seek state council of higher education approval, plan out financial expenditures, search out those faculty whose vita seem to fit the requirements of the model, seek state council approval for the first offerings, and finally implement the program. Instead we let our community identify a need. We assess whether that community will support that need with its resources, and whether our response seems to fit our overall strategy for the development of the university. Then with usually what is no more than a kind of locus of points of where that program should be placed in the intellectual spectrum we begin to look for a suitable leader, a person of some eminence and a certain passion for building things - - we call that person a "horse." We don't begin until we are satisfied we have a critical mass of resources set aside. We then promise that horse the positions and support necessary to drive whatever the program is to become to some level of national rank. The program then evolves from whatever dreams the people we recruit are able to make real. As that program finally evolves, of course, it confronts the state coordinating council with a *fait accompli*. I can always understand their exasperation but I have never found a way to accommodate their kind of planning with what I see to be the realities of developing my institution.

One of my favourite New Yorker cartoons shows a couple driving down a highway. The husband says, "So what if we're lost. We're making good time." That captures, pretty much, my attitude as my university's chief planner.

Our strategy of building a national university on a narrow regional base is simple and straightforward and probably can't be imitated in other locales. But I would argue that all successful planning today must abandon comfortable conventions and must accept flux and uncertainty, must accept our circumstance as that of an odyssey, a process of becoming as we seek the home we assume we will recognize once we arrive. There's something very American about that, by the way, for to use Perry Miller's great phrasing of the quest of early colonists - - we are perennially launched on "an errand into the wilderness." In order to plow at all in such a setting on such an errand, we have to accept the matter of risk and the matter of will. For we are going to make time whether or not we know where we're going.

We have the clear sense that we are on the edge of a new world and that we have to set out in a very determined way to get home. You might say that ours is an odyssey. But it would be much more American to base our analogy on homegrown experience, that of those early Puritan settlers who in Perry Miller's unforgettable phrase were embarked on an errand into the wilderness, one in which data, consensus, conventional measures, and all the passivity of management based on institutional research made little over regimen and the choice of position.

**Trachtenberg:**
One obvious implication of developing prototypical universities for the twenty-first century is that we do not have such universities at the present time. This fact may be suggestive of a rather deep underlying crisis - - one that actually deserves to be called a crisis.

Such an interpretation is confirmed by the description of this morning's session: "In recent years, higher education has been criticized for its resistance to fundamental changes in academic structure, accessibility, and global perspective." This description is quite correct and somewhat understated. What we seem to be witnessing is a gathering national consensus to the effect that all parts of our education system, including our universities and colleges, are failing the nation that supports them at huge expense.

It would be an easy matter for me to spend the next half hour regaling you with evidence to this effect - - but I don't think you need it. Academicians who read the Chronicle of Higher Education, especially if they also read a major newspaper on a daily basis, have all the evidence they need of the stormclouds now gathering above their heads. The example of Great Britain is never far from our eyes - - a society whose investment in higher education is close to a thousand years old . . . a society whose major universities are international synonyms for pedagogical striving and tradition . . . and a society that unhappily has taken power over its universities away from those who actually work in them.

Yes it can happen here as well. The fact that it is nearly impossible for an American without a college degree - - and often a graduate degree as well - - to pursue a well-paying career makes the status of our universities a matter of general public concern. When the American public increasingly assents to the notion that universities are overpriced, underperforming and possibly corrupt, the stage has been set for intervention by the federal government and by state governments - - intervention that

may not take a happy or even a productive form, but that will be mandated by sheer public concern.

In other words, my personal translation of the title of this session reads: "Developing a Program of University Self-Reform That Will Head Off Reform From the Outside." That, in turn, leads me to the final sentence of the program description, which reads: "In this session, there will be identification and discussion of institutional strategies that have been and are likely to be used by (Presidents Johnson and Trachtenberg) to respond to the changing needs of their local constituencies and society as a whole."

Amid the hubbub of discussion that now envelops and pervades the academic world, one of the few agreed-upon conclusions has been that a university president enjoys limited power over the school he/she heads - - power so limited, indeed, that a corporate chief executive officer (CEO) would scarcely regard it as worthy of the name.

There is also a clear consensus with regard to at least one aspect of this relative powerlessness: the institution called tenure. While corporate leadership and corporate discipline are based on the power to hire and fire, an academic CEO is in the position of having to influence, convince, plead and cajole. Whether to hire, by denying tenure, or to fire are decisions made elsewhere. They ordinarily reach the president as complete packages requiring only to be ratified before they are passed on to the board of trustees for final action. Every university president knows in his/her bones that refusal to ratify even one such decision will result in weeks of tedious labor as the constituencies involved, including departments and deans, are listened to, argued with, and perhaps finally mollified.

I feel a natural hesitation, therefore, about declaring, on behalf of the The George Washington University (GWU), what "our" institutional strategies are going to be. Rather, I will speak in a more personal way about: (a) my reasons, a year-and-a-half ago, for choosing to accept the presidency of George Washington; and (b) the directions in which I have since been encouraging the University to move.

I accepted the presidency of the school for reasons deeply connected with the topics we are discussing this morning. Paying attention to the developments of the 1980's, I reached the conclusion, around the middle of the decade, that a nationwide program of self-reform was inevitable for our universities if they wished to avoid the kinds of disempowerment or disestablishment that any society is capable of inflicting on institutions it regards as dysfunctional.

In several talks delivered since that time, I have referred to the action taken under Henry VIII against the British monasteries, whose position never looked stronger or more solid than in the years preceding their complete abandonment. Though our university system may be less vulnerable than that - - since this is not an agricultural society in which academic institutions own four-fifths of the land - - the difference is one of quantity rather than quality, especially when we consider the influence universities now have over the national economy, most especially where its personnel needs are concerned but in other respects as well.

Having reached these conclusions, I chose to accept the presidency of GWU because I felt that its history, geographical position, established character and unvoiced hopes gave it a chance of becoming a prototypical university for the 21st century.

GWU is located in Washington, D.C. I spent a number of years in Washington in the sixties, and kept in close touch with legislators and other friends in the ensuing twenty years. I know much good, bad, and indifferent that there is to say about this town. I also know that none of it can affect the overpowering influence this city has on American life. That which fails here is perceived as a nationwide failure; that which succeeds here is regarded as a nationwide example.

GWU has been identified, in its 168 years of existence, as a school concerned with national and international affairs. In a world as interdependent as the one we now occupy, it's absurd to imagine a successful career pursued in any field, from medicine and law to ecology and government work, that does not have an international component. Having heard a lot in recent years about "cultural literacy", we may have to hear a lot more about multicultural literacy i.e. the ability of a university graduate to cope with people, including very important people from a multitude of backgrounds, religions, cultures, and philosophies.

GWU is located in an American city with a large minority population. Seeing to it that our minority groups, who will soon represent a majority of our population, become productive contributors to our national economy is no longer just an act of decency or good will. Failure to accomplish this task will leave us, in the 21st century, with a hobbled or crippled America. Universities will either become forceful and effective participants in carrying out the task or they will have added one more indictment to the list of charges now being drawn up against them.

Let me put the matter in a positive spirit: As president of GWU, I am encouraging every policy direction and individual or departmental effort that responds to these challenges, and makes use of these varied resources, to move the University towards becoming a prototype for the 21st century.

And now let me turn the coin over and contemplate its other side. The fact that as a typical university president I have more limited control over my institution then is generally understood and function at times as a leader who is in effect a lobbyist can be described as an occasional personal irritation that, in its national aspect, is a profound danger.

What universities will be allowed to do in the way of self-reform depends on the American public's perception of their capacity for self-reform. The sense that in talking to a university president you are in some ways talking to a figurehead, however unfair that may be to particular academic CEO's, does not favour the cause of self-reform as opposed to the cause of legislatively directed reform. The growing sense that university faculties, with GWU and George Mason notable exceptions, have become defenders of the status quo, more concerned with protecting tenure and the academic lifestyle than with providing cost-effective services to the national economy, also favours the latter option, which can be applied to private as well as public institutions by virtue of their governmental charters.

We face a brave new world in American higher education. Let us only hope that we have the courage to face it bravely!

***Commentary: Sanford***

*President Johnson began his opening statement with the provocative quotation: "The beginning of wisdom is the confession of ignorance." and then confessed that, as a planner, he does not know what he is doing or where his institution, George Mason, is going. Society has moved to the point where the unpredictability of systems is the rule and linear planning is no longer valid. Given that organizations, including institutions of post-secondary education, have lost confidence in traditional, formal planning processes, how does one plan? Johnson noted, however, that the lack of clear goals in academic or institutional planning has not kept most universities from having very clear, specific goals and objectives in the fund-raising arena. More to the point, though, Johnson pointed out that it is virtually impossible for any of us to know what our university will be like in five or even two years. The only thing we can count on is that our universities will be different in the future. Hence, the need is for developing the process of planning in which the goal is to position the institution in the most advantageous way for whatever develops. Johnson urged the audience to abandon traditional, comfortable conventions in dealing with the future and, in state universities, for administrators to realize that what the state requires is not always what works best for the institution.*

*President Trachtenberg echoed the main theme of President Johnson in pointing out that there are no pure university prototypes for the twenty-first century, even the British models that have served us so well in the past seem tarnished. Tenure, he said, and the university president are examples of relative powerlessness on college campuses these days. However, Trachtenberg moved away from Johnson's emphasis on process over planning in noting the strong need for a self-reform program in institutions of higher education. He pointed out two distinctive features of GWU's current strategy for preparing for the next century. Emphasis has been placed, consciously, on developing the multicultural dimension of the University as well as in strengthening the international component of the curriculum. The challenge to GWU is to use its resources wisely to move effectively into the next century.*

*The moderator asked the speakers if they were describing the need for college presidents who were risk-taking entrepreneurs? Trachtenberg replied that risk-taking requires either courage or foolishness, and he would let the audience decide for themselves. Johnson said he did not enjoy taking risks and tried to define risk out of the equation by having as clear a vision of the future as possible. Failure, he said, is merely a time to change direction and try again while doing the best one can.*

*A second question raised the issue of public support of higher education in the future and the effect of possible decreases in that arena or the need to manage change successfully. Johnson agreed that state institutions are going to be seeking resources in an increasingly competitive environment and that leaders of these institutions must realize that and act accordingly. For him people come before bricks and mortar; he recruits the best staff the same way that Joe Paterno recruits the best athletes rather than just the best football players. Johnson shifts the responsibilities among his vice presidents occasionally so that the one common thread among all of*

*them is the drive for success. Trachtenberg said that he does not eschew bricks and mortar although the recruitment of the best talent is his highest priority. The discontent of faculty currently may be more comparative than absolute although accurate measures are hard to come by.*

*As a corollary, then, the moderator asked about President Bush and the likely picture of federal support for higher education in the future. Trachtenberg replied that it was too early, of course, to evaluate President Bush and his administration, but that we do need to hold the new President to his campaign rhetoric. The promises of the election process become instruments in the hands of the electorate after the election is over, and it is up to us to hold the administration responsible. Johnson expressed the concern that what may be in doubt is not President Bush's agenda for higher education, but what is higher education's agenda for the President? Higher education in America does not have a strong vision of its future which makes it difficult to press others for support or change.*

*A last question dealing with the broad field of economic issues asked about the role of colleges and universities as the growth of the labour force slows to a halt and the buzz words for coping become "work smarter." President Johnson stated that we must reattach the academy to the larger social order so that a true partnership between business/industry and higher education develops. President Trachtenberg continued that theme by pointing out that the business community bears more affection for higher education than vice versa as witnessed by the high degree of training offered in most industries. Teaching rather than research would seem to be the area of greatest overlap both with business/industry and with the public. Universities need to reconcile their strong research drive with that realization. Liberal arts are still the heart of the university and must receive the resources they require.*

*Finally, in response to the question of where does institutional research (IR) fit in with the entrepreneurial president, Johnson stated that good IR people must see where the institution and president are going; they must be prepared to shift perspectives as they share in the "corporate" advance on the unknown. Trachtenberg said he wanted an IR staff that provided solutions along with problems. His administrative style pulls his staff together as a family but not by encouraging agreement for its own sake. The people who are most helpful are those who deal with problems creatively.*

**The Silicon Foundations Under Our Twenty-First Century Ivory Towers**
(general session)

Speaker:
Robert C. Heterick, Jr., Vice-President,
Virginia Polytechnic Institute & State University

Reactor:
Jane N. Ryland, President
CAUSE

*Commentator:*
*Henry M. Doan, Adelphi University*

(This is an edited record and commentary of an address presented in the Omni Ballroom, Omni Inner Harbour Hotel, in Baltimore, Maryland, on Tuesday morning, May 2, 1989.)

***Synopsis: Doan***

*"Demons, Paradoxes, and Golden Arches" were parts of the triangle paradigm which Dr. Heterick provided for his audience.*

*Dr. Heterick began by stating that, since its invention, printing has grown to be the dominant information technology of our time. The evolution of education in our society, especially since the Renaissance, has paralleled the development of printing. Printing and education have enjoyed a close relationship for more than 500 years through the standard way of classroom instruction, i.e. text books as well as professional journals and publications.*

*This century, particularly during the past twenty years, has seen the rise of digital technology, ubiquitously referred to as information systems. This new technology is becoming a surrogate for print in our higher education environment. Information systems can be described as a triangle of three components in a state of explosion: information, communication, and control.*

*In the 1970's, the quantity of information one received doubled every ten years. In the early 1980's it doubled every five years and by the mid 1980's it doubled every twenty months. The Library of Congress, for example, doubled its collections in just seven years, between 1979 and 1986. That is what information explosion means in physical terms.*

*Is printing thus becoming obsolete in this stage of information explosion? The answer is absolutely not! Campus print shops are using more computer print paper than ever and campus copiers generate volumes of photocopies everyday. It is unrealistic even to think about a paperless society, especially when we look at the computer as a printer with an extremely short "shelf life" of the printouts it generates.*

*Communication is also exploding with the growth of the Bell system and the AT&T network. The network grew astronomically in fourteen years, from covering a very few*

*northeastern counties to covering practically every county in the continental United States. Today, the telephone is so ubiquitous that there are perhaps more of them than there are men, women, and children in the U.S. Many universities own and operate their own telephone companies. Some have thousands of lines of voice and data, making them among the largest telephone companies in the country.*

*Television is also growing by leaps and bounds. In the late 1940's, for example, there were approximately 190,000 television sets in the entire country. Five years later, this number increased to about 21 million or two orders of magnitude. Many colleges and universities are heavily into TV broadcasting, satellite uplinks, broadcasting different programs simultaneously, and using cable TV systems. Most of these schools use television to broadcast undergraduate and graduate courses and for teleconferences. Digital technology, as it applies to television broadcasting, is being rapidly adopted and adapted on many campuses.*

*The need for control has become part of our daily lives. Computing, combined with other technologies, helps to increase control and efficiency by multifold orders of magnitude. For example, modern jet transportation represents two orders of magnitude improvement over walking. If computing is combined with communication, one gets six orders of increase. In one year, the BITNET network has doubled its size, with ever increased efficiency at a low cost. Hardware has also improved its efficiency by increasing processing power and improving configurations. As a matter of fact, computers outnumber telephone sets on many college campuses.*

*Why is it that more computers are being bought on campuses? In the 1950's, Herbert Grosch postulated that the power of a computer tends to increase as the square of its cost. Therefore, if one doubles the cost, one can quadruple the power. The tendency at the time was massively centralized computing facilities which were considered cost effective.*

*Current tendency moves away from very large centralized computing operations to personal computers. There exist in any given time different personal computer generations, with new ones being introduced in the market, while others are washed away by the 'tidal waves'. Since 1977, Apple, IBM, and Macintosh personal computers all have reached their popularity peak after two years of existence, then they have started riding these tidal waves. In other words, there exists in our time the phenomenon of 'computer decay'.*

*If the future is going to be like the past, one can expect that the cost of computer processor technology will continue to decrease and the cost of computer software development will increase, while the cost of computer hardware components will decrease significantly. One can also expect that the currently available personal computers will become obsolete tomorrow. (Actually the half life is twenty-four months.)*

*Paradoxically, one's view of computers has changed over the years. This view started with time-sharing in a large central computer in which the computer became the center of the universe. The users, according to this view, had to adapt themselves to computer centers. The view has changed with new developments in digital technology. Now users have become the center, demanding access beyond their work stations to those things they cannot get from their personal computers,*

*demanding high speed laser printers, and access to electronic mail and international file transfer systems, to name a few.*

*At the time when transaction processing systems were built initially, users were not expected to be highly skilled. Nevertheless, as one moved towards the management information systems era, skills were required of the users. Take the spreadsheet as an example. The spreadsheet is supposed to be a problem solver, doing the programming for its users; instead it has outgrown them. It now requires the users to be able to read and interpret technical manuals which can be as long as six hundred pages. The role of computer centers thus becomes one of integrating various software into an environment which makes it less demanding for the users.*

*Now it is not possible for information systems professionals to remain provincial. They must open the systems to the world. They have to reach out to all members of the campus community and to work with other people as well, and to use communication as the link to open the systems to 'outsiders'. It is true that the more information one has, the better decisions can be made. Nevertheless, students in the classroom do not get enough information, the faculty do not get sufficient information for their research projects, and administrators do not get sufficient information to make decisions about the institution. Moreover, society at large does not get enough information about institutions to determine their funding. Institutional researchers, thus, must find ways to get more information into the system. They must also make a large quantity of information conveniently accessible to every member of the campus community.*

*Universal standards must be established and adhered to so that consistency can be realized. In other words, this era needs the "Golden Arches" standards, i.e. the McDonalds standards so that a Big Mac bought in Hong Kong tastes the same as that bought in Blacksburg, Virginia. The same holds true for communication and technology transfers.*

*At the institutional level, diverse components must be connected into one network which consists of data, print, video, voice, and graphics. Part of this network is already happening with libraries on campus. Dr. Heterick touched on the relationship between the library and the computing center and the library and the institution's communication activity. Libraries are moving from being people intensive to technology intensive, i.e. computational control and computing communications control. The growth in commercial retailers of bibliographic and full text services is evidence of this trend. But what happens to people in the process? This network must then be delivered to the desktop computer in a format which the campus community wants.*

*Dr. Heterick ended by saying:*

*"We have come full circle and recognize that information is the negative of entropy. The demon we have unleashed is convenient and provides economical access to data and its simple, yet powerful, manipulation. It is important to insure that large amounts of information are conveniently accessible to everyone in the institution. The result is the releasing of the latent system energy accompanied by increased productivity and a higher quality output."*

**Reactor: Ryland**

Dr. Heterick has given us the view that we need to create a single systems image to facilitate access to information technology and that the objective we should aim towards is to make large amounts of information conveniently accessible to everyone in the institution. Now I believe in these things but I'm going to play the devil's advocate and take issue with some of them.

One of the major impacts of computing has been the proliferation of information. The ability of a computer to store and retrieve information has resulted in a veritable deluge of data. The rapid growth has led to the twin dangers of the disuse and the misuse of information. The disuse of information occurs when there is so much information available that one goes into information shock. Intimidated by the complexity and detail of data, we find it easier to ignore all the facts and proceed on a purely visual level. On the other hand, information is often used as the deciding factor in situations where other concerns, cultural or ethical values for example, should guide the course. Such misuse of information ignores the essence of humanity.

Bob mentioned that personal computers (PC) we buy today are going to be obsolete tomorrow. But what should we do about that? I don't think we should just give up and sit back and not buy anything. I think what we need to do is put in place what we might call a technological "trickle down strategy." A strategy where you can always find someone in the institution who can take advantage of the computing resources that are becoming obsolete.

Bob says that computing is shifting to users and we have to provide sufficient information to aid them in what they are doing. We need to focus on the changing role of computer services. Rather than focus on technological capabilities we need to focus on how we can help the users take advantage of the information. A further point is in helping users take advantage of the revolution in information technology. At a recent conference, I learned that many institutions are experiencing cases where users are turning back to central computer services. Users are out there with their personal computers trying to deal with new releases of software, backups, redundancies and inconsistencies of data. These users are coming back to computer services for help and computer services has to be there.

We, in the information technology profession, have to make a better case for the benefits of information technology. As Bob says, when a technology can clearly provide advantages it will be adopted. Recent literature suggests that there are few uses of executive support systems in higher education and that few examples exist of the use of decision or of executive support systems in other sectors.

Bob suggests that we should take advantage of the synergies between the library and the computing centre. Some have taken the approach of trying to merge these two or combining them under a single organizational structure. Certainly there are advantages from planning with areas that are so intensive in their use of information technology. But you have to be careful. The institutional culture is a significant determinant of how you take advantage of the synergies.

Finally Bob says that we should try to make large amounts of information conveniently accessible to everyone in the institution. Instead I would like to see the objective of

making the right information available to those who need it and providing the right tools to facilitate the use of information in support of the institutional mission.

***The view from Institutional research***
***Comments: Doan***

*The following issues raised by Dr. Heterick need to be addressed: i) the issue of personal computers becoming obsolete quickly; ii) the issue of providing more information to the campus community and iii) the issue of networking diverse components on the campus.*

*How should one deal with the issue of personal computers becoming obsolete? First of all, one should keep in mind that not all areas within the organization have the same hardware and/or software needs, and even when needs are similar, usage rates may vary. Therefore, PCs can be redistributed to other users whose needs can be met by the reassigned PCs. In many offices of institutional research (IR), the PC is often used as a stand-alone unit for data management and analyses; some offices even use the PC as a desktop publisher. It is also used as a terminal connected to the mainframe. In other words, on college campuses, IR offices are among those few offices with the most need for newly developed PCs. Once these PC units become obsolete, they can be reassigned to other offices with fewer PC needs. Such action will require planning but will be cost-effective in the long run.*

*How should one deal with the issue of providing more information to the campus community? We are in an information explosion. People seem to be complaining more about having too much than too little information. Decision makers do not have the time, and sometimes the capability, to sort through the information available to them to figure out what part of the data is relevant in their decision making process. Chief executive officers (CEO) often have to rely on their staff to do a thorough screening of available information to highlight data felt to be important for them to make informative decisions. Executive summaries are often required of institutional reports submitted to top executives.*

*CEOs would not be well served when given reams of computer printouts. Even appendices of lengthy and complex tables containing detailed statistics would be intimidating to many CEOs. Many may go into a state of information shock. Overwhelmed by the complexity of the data, some decision makers may proceed with their decisions merely on the basis of hard data, disregarding the many cultural factors of the organization which need to be referred to for sound decisions.*

*Perhaps, the issue should be for institutional researchers to sort through large amounts of data to figure out which part of the information is relevant to decision makers, considering the mission of the institution. Then, make this information readily available and accessible to decision makers as well as to other members of the campus community. The issue, thus, becomes one of providing relevant and selective information to the campus community, and not one of providing large amounts of information to 'the world'.*

*How would the proposed "network" help the institution? It is true that diverse components within an institution must be connected to form a single system network.*

*This network should include: data, print, video, voice, and graphics. These must be interrelated and interconnected to form an institutional system. This would definitely help to bring the institution together at least on the level of data collection and dissemination. This system would insure data integrity and compatibility. The information retrieved from one single integrated data source is more reliable than otherwise would be the case.*

*Nevertheless, people must ask themselves this question: "What is this network going to do for the organization?" One does not know if the network would be able to support institutional strategic planning with better informed decisions. Would it support the mission of the institution? Even when the components are connected and the network in place, how does the institution proceed? These questions were left for the audience to ponder.*

**Higher Education Policy Issues: An International Perspective**
**(general session)**

**Panelists:**
**James A. Dator**
**World Futures Studies Federation**

**Helmut de Rudder**
**University of Luneburg**

**Elaine El-Khawas**
**American Council on Education**

**William Taylor**
**University of Hull**

***Recorder/Commentator:***
***Bernard S. Sheehan, University of Calgary***

**(This is an edited record and commentary of an address presented in the Omni Ballroom of the Omni Inner Harbour Hotel, in Baltimore, Maryland, on Tuesday morning, May 2, 1989.)**

*This session is a followup to the Sunday evening opening general session with a focus specifically on the future of higher education policy. In the earlier session, Dator made the observation that colleges were not able to help citizens face the future and there was nothing that colleges could do about it. He noted that colleges concentrated on things that were the same as the past or at least the same as the present whereas they should concentrate on things that arise out of the past or present as well as those novelties which we can anticipate. He noted of course that there would also be utterly new events but we would not be able to anticipate them. His talk was divided into five trends: (1) the aging, yellowing, browning, and blackening of North America and the world; (2) the end of economics; (3) the U.S. as an ordinary nation; (4) the death of nature and the invention of a wholly-artificial world; and (5) the evolution of post-homo sapiens. He also noted that this was a good year for future studies because of an awakening to environmental concerns due to the warm summer and the "good ship Exxon", the decline of the United States government thanks to President Reagan, the recent events in the Soviet Union and China, and the anticipation of the European Common Market in 1992.*

*The moderator of the session indicated that participants and members of the audience should try to keep their remarks within the following three areas: (1) information for decision-making; (2) teaching and learning; and (3) organization and finance.*

**El-Khawas:**
Futurists make me uneasy, but their ideas are those that tend to stay with me after the conference. They always provide good food for thought and topple assumptions I did not know I had. Among the trends we have not yet discussed is that of increasing population density i.e. those higher education scale problems we will face as institutions become very large in the way general populations have become concentrated in urban centers. The notion of an artificial world with its emphasis on electronics and bionics seems jarring to one used to traditional higher education structures. It seems that we are going to have to reorganize resources and institutional functions, not along discipline bases but more towards institutes that cut across departmental lines and units which have a problem focus. Our discussion

here today should remain pragmatic. What do these trends mean to higher education?

**de Rudder:**
Generally American institutions have a higher potential for innovation than other institutions (European) which are less adaptive to change. Universities cannot change too fast and that helps them avoid fads because we often have second and third thoughts. A lot has been said about the future and how new ideas will replace old but we need a careful record of change so we can reflect again on some of the old ideas. There are several specific points that I would like to make:

(1) How much higher education do we want, i.e. is one hundred per cent of the population a suitable goal? In Germany, most of the graduates are nearly 30 years old and with early retirement this makes for a short productive life.
(2) We need more recurrent education because technical knowledge goes stale quickly. (Less continuing education exists in Europe than in the United States.)
(3) We need higher education for a more diverse ethnic population.
(4) No one knows the requirements for the future, hence, methods of thinking and coping with new problems may become more important than content.
(5) We need more general education.

**Taylor:**
We think short-term, especially politicians, and there is danger in not responding to longer term threats. What are the implications for these trends proposed by Dator for administrators? We must recognize that the future is being made in the laboratories and libraries of our universities and that the future is not being made by futurists. Institutional researchers and campus administrators must act as facilitators for the future. We must help universities maintain their emphasis on teaching, learning, production of new knowledge, and on service. Remember that a university is not a plant. I do not agree with everything Dr. Dator says, but he makes us think. And there are too few people today trying to make us think.

**Dator:**
Please join the American Association for the Advancement of Time (AAAT). AAAT is trying to get policy makers to stop being stuck in the '60's when thinking about the future. Diversity and urbanization are indeed important. Clearly, we must not allow our policy making to be determined by the past. I agree that the future is not set by futurists. It is the businesswomen and men who are the real revolutionaries because they are marketing the new products that are produced in the laboratories. Future studies can only look at those things that are continuing. German universities can, if they wish, be experts of the past, but as I mentioned in the earlier talk we have to be concerned about trends as well. Novelties come from the labs and are implemented by business people who go out and destroy the old society by the introduction of new products and services. Analysis of how society is changing is the role of future studies as I mentioned in developing the five trends in the first talk. One should remember that future studies wants to increase your uncertainty, not decrease it.

**El-Khawas:**
Higher education is very conservative and inefficient today and will be comfortable to stay that way. I would like to make two points: (1) we use only one language even in international programs and we are forced to teach languages the wrong way because of the inappropriate structure of the university; (2) even when a call for

change is made, it is difficult for universities to respond. Higher education does not have an effective means such as the franchise to spread good ideas as corporations do.

**Taylor:**
We can agree on structure and process but it's the content that we cannot agree on. Content is what universities are about. Cambridge and Oxford Universities have changed a lot in the past five or ten years, not in structure which is still medieval, but in what is going on in the classrooms and laboratories. There is an old Chinese saying about three foolish things: sleeping deeply in a strange house; going to sea in an old junk; and lagging behind when an elephant approaches a new bridge. Is the organizational question a shopping mall vs. a factory? Should American universities be more specialized?

**de Rudder:**
Let me refer you back to the paper in which Dator said that American higher education is the biggest obstacle to helping Americans and the world face the future. Technology aside, should we throw out the rest of our collective past? The history of problem-solving by many generations surely has taught us something. In the rich philosophical traditions of the western world there are many ideas and much substance helpful to the future.

**Dator:**
Many traditions hold values for the future, not just those with which we are familiar. These western cultures are often centered on the deeds of "dead white men." Evolution of new societies towards artificial cultures occurs even though we humans are not the crowning achievement of evolution. The past is not prologue but technologies are the agency of change. Artificial intelligence and genetic engineering are creating a future in which even the traditional values of humanism will be less relevant.

If we contrast the educational system of Socrates with that of Aristotle we see clear differences in structure and substance. The introduction of reading and writing was the change in technology which brought about the change. Literacy is more than reading. We have no courses on the topic of television and that's where most students get their information. Ideas are different because of the medium through which they are transmitted. The current historical period has essentially past, therefore, it is not particularly relevant to the future. Franchising will be done by multinational corporations not by the universities.

**Taylor:**
What you say about alternative media must be wrong if librarians are telling the truth. They need more space, everything is an add on, the new technologies are producing more and more paper that must be stored. New technologies are important but they are always over and beyond what we have now.

**Dator:**
We are on that interface now. Do we need to spend more on buildings or should we put more into alternative media? Most of us here cannot speak in a way that most people understand - most people around the world do not understand from a print base. There is a new ivory tower, an education system based on print yet the people

understand basically from other media. We in higher education insist on having people learn our way rather than we adapting to the ways people now learn all around us.

**Taylor:**
Important ideas cannot be transmitted well by images. Visual images are limited; they may be good for first year courses in anatomy, but not for ideas. Audio-visual technology is excellent and we should use it more in teaching, but when judgement, understanding, and intuition are involved, the student learns more by seeing a mind at work. You cannot beat the classroom setting for this experience.

**Dator:**
I agree. But do not keep thinking of learners as passive consumers. I accept that print is good for analysis. Other media must be emphasized. Just because we learned to read and write does not mean we stopped talking.

**de Rudder:**
There are large numbers of people who cannot read and write well and this will be a problem for them in the future. You think in words; to cope with the future you have to be able to work with language, think with language.

**Dator:**
You can get at that better by starting with video then moving to print because video is the dominant media.

**El-Khawas:**
Our generation likes books. The next generation reads with their walkmans on. We have to relate to the way the next generation thinks and communicates if we are to be effective in higher education.

***Question From Floor:***
*Can we come back to the international perspective? Business people have been working in China for ten years. There is much to be learned from these cultures. Many campuses are experiencing a greater emphasis on international perspectives not just through languages but changes in other aspects of the curriculum. Faculty and students are studying in many places other than western Europe. Many campuses have an increased emphasis on a global approach.*

**Taylor:**
There are examples in many institutions of a new focus on international studies that go well beyond just languages.

**Dator:**
Learning another language, especially an Asian language, gives one an entirely different perspective.

**El-Khawas:**
Actually, the numbers do not show diversity. Half of the American students studying abroad study in Britain. It turns out to be difficult for people to study in a third world country.

***Question from Floor:***
*This is a bit of an overgeneralization but as I see it the hard scientists are creating the new knowledge, the social scientists are analyzing and proving that a society cannot adapt to the new knowledge, the humanists are saying we never could have adapted for certain basic reasons, and all of these professors are teaching people to prepare for an unknown future. If society comes to higher education and asks what should we do to be saved, can higher education provide answers or should higher education tell society to take their dollars and go somewhere else for answers?*

**Taylor:**
The difficulty is the debate about purpose becomes trivialized. The debate about purpose, structure, and processes is not going on in most countries because not many careers depend on it yet.

**de Rudder:**
I agree. It is good to learn Japanese and so on but it takes a lot of time beyond what someone from the United States would spend studying in a British university. It is important to define the essential elements of a general education. What are the essentials?

**Dator:**
Let me say a word about the content of higher education, or at least of the general education curriculum, which I haven't addressed at all so far. First of all, there ought to be no required courses; no introductory courses; and no necessary sequence of courses: there is nothing that you don't need to know; there is nothing that is absolutely essential for you to know; and wherever you start, with whatever subject matter, it will mean something else to you later, when you return to it after having learned much in between. So just START with whatever is interesting to you, and study as widely in as many areas, as well as deeply in a few, as possible.

The general education curriculum should focus on the following areas: (1) learning to create nonviolent, non-killing-accepting societies; (2) learning to create societies which seek to minimize structural violence, such as social injustice, economic inequality, sexism, and racism; (3) learning to use science and technology actively to address what the Club of Rome calls "the global problematique" not so as to "return to" or even to "preserve nature" but to learn how to accept responsibility for creating a fully artificial environment, that is, to "govern evolution"; (4) thus achieving scientific and technological literacy as an active, creative, socially goal-oriented process; (5) attaining media literacy, as I've previously discussed; (6) learning and practicing "valuing" and acquiring and clarifying one's values, but no curriculum should teach any one value system (including the one implied above) as "true"; (7) similarly learning, practicing and helping persons acquire an aesthetic sense - - especially the personal aesthetics of everyday life, but no curriculum should teach any one aesthetic perspective as preferable to any other."

**Taylor:**
You cannot do this directly. It would be like teaching happiness. Most of your seven points can be taught in a course on Shakespeare.

**Dator:**
Yes but we do not teach Shakespeare that way now.

**El-Khawas:**
People who are most thoughtful in our civilization tend to have some association with universities. Good thinking is done in a university setting. How did we get there? We get there by the way we are organized as higher education. The faculty have a good deal of freedom and we cannot cut that off in the search for increased efficiency. The university setting allows good ideas to be generated.

**Urban Colleges and Universities: The Special Challenges Ahead**
**(general session)**

**Speaker:**
**Rafael Cortada, President**
**University of the District of Columbia**

**Reactor:**
**George Vaughan, Director**
**Center for Community College Education, George Mason University**

***Commentator: Kathleen K. Bissonnette, West Virginia University***

**(This is an edited record and commentary of an address presented in the Omni Liberty Room of the Omni Inner Harbour Hotel, in Baltimore, Maryland, on Tuesday morning, May 2, 1989.)**

**Cortada:**
Let's be direct. What is an "urban" college or university? On the one hand, it is easy to say that simple location in a city makes an institution urban. But I'm not comfortable with that. Columbia University is located in Harlem, in New York City. But Columbia is Ivy League, oriented toward pure, esoteric research, national in scope, and rich. Columbia's vision goes beyond New York and urban needs. On the other hand, the State University of New York (SUNY) at Old Westbury is nestled in the rolling hills of a horse farm in a wealthy Long Island suburb. Yet about half the students are minority, their research is applied and urban oriented, and the College values its "special mission." SUNY Old Westbury is an urban institution.

Urban institutions transcend mere geography. To be truly urban, an institution's mission must be intensely focused upon the potential of urban students, and its research upon urban policy and problems. Ultimately, urban faculties are characterized by a distinct mindset. They tend to be involved with the surrounding community.

The mission of an urban university can be very traditional. At the University of the District of Columbia we embrace the traditional land grant triad of teaching, research and public service. But while our mission resembles that of Kansas State, we provide a unique urban 'spin'. Our students reflect the District demographically, including the increasing immigrant population, and the large foreign-born and diplomatic communities. Our research leans toward applied scholarship. Such research includes the focus on homelessness in the District. Our faculty have placed urban homelessness in an historical context (the problem is not new), analysed the District's current situation, and provided very specific public policy recommendations to the Mayor and the City Council.

In developing its program of public service, the University has focused its energies on improving the quality of urban life. The faculty have sponsored two symposia on urban street violence, out of which emerged unique research of immediate value to policy makers. Here again, they have boldly included specific policy recommendations. The University is also in the process of developing an institute on

children's play and development. As we look at the whole range of problems facing cities, many are found to be youth-centered. School attrition, alienation, values, self-esteem, drugs and violence are fundamental problems with youth today. The new institute will seek to analyse the problems, define needs and propose solutions at the very root of the crisis.

There is nothing esoteric, then, about the identity of an urban institution. It can be located anywhere and its mission can be very traditional. However, universities become urban through the priorities and values they elect.

National Needs

Emerging national problems are certain to impact on urban institutions over the remainder of the century. The nation has specific workforce needs in the next generation. We will need competence, educability and a restored work ethic. Urban institutions will face particular challenges in meeting these needs. We serve lower income populations who suffer higher rates of attrition from public schools and emerge with weaker basic skills. To complicate the equation, our cities are accommodating the highest volume of immigration since the 1890's. So our urban institutions will be more culturally diverse, and complex.

The nation's need for economic competitiveness will place additional pressures on urban colleges and universities. The European Common Market and Japan are eclipsing the United States in productivity. While we are plagued with basic skills deficiencies, high attrition rates and educationally bypassed populations, the Europeans and the Japanese have given a high priority to, and had greater success in, the development of human resources. For example, Japan produces 72,000 engineers per year. France, West Germany and Great Britain produce 31,000. The Soviet Union produces 335,000. The United States graduates only 78,000 per year. Clearly, we must retain and graduate more students in technical fields, and in areas of shortages such as nursing and education. This effort cannot succeed unless minority and urban populations are better served by urban colleges and universities.

Finally, the nation faces rebuilding in capital and human resource areas. Our urban capital infrastructure is decayed, and technical manpower is needed to orchestrate the planning, funding, and management of this monumental rebuilding task. In less concrete areas, our urban public school systems need rebuilding as well. We cannot succeed in remaining competitive and refurbishing our infrastructure unless our public schools succeed in conveying basic skills, traditional values and critical thinking and analytical skills to all of their students.

Even before we can consider strictly urban needs, it is evident that national pressures and needs will dictate the priorities, and the agenda, for the nation's urban colleges and universities.

Our Urban Condition

Ten years ago, we spoke of an "urban crisis." We don't hear about that anymore. The "crisis" has not been 'solved'. But we've come to realize that coping with the problems we defined then as a unique crisis, will be the normal state of affairs of the next generation. There has been progress. The urban core has been rebuilt, and

the term "downtown renaissance" is used in Baltimore, Philadelphia, Washington, D.C., Detroit, and Los Angeles. Gentrification, which is questioned by some, has helped restore economic diversity and the tax base. Elected officials are quite receptive to new ideas and they welcome public policy recommendations and applied research from universities. The Mayor of the District of Columbia, for example, was very supportive of our symposia and research on urban street violence. The police chief, the director of public health and other senior officials participated. But they were confident that our aim was scholarly, and that we were not out to place blame. This kind of confidence makes true partnerships possible.

Our cities have made progress, but crisis conditions still exist. All the nation's cities have been impacted by the drug traffic and the street violence that seems to accompany it. And homelessness is most evident in the cities. The District of Columbia spends $29.7 million yearly just to provide temporary shelters for the homeless. And Lorton Prison has a higher "FTE" than the University, and a larger budget. These factors are draining resources. As our cities pay to apprehend and incarcerate people, and to ease their suffering, resources are drained away from education, where negative generational cycles can be broken and solutions found.

Our cities are becoming racially and economically isolated. Today, in 39 of the 48 largest school systems in the nation, minorities, Blacks, Hispanics, and Asians, are the majority. With the infusion of new immigrant populations, our urban centers then become more complex as relations among minorities, an area ignored by traditional scholars, add new volatility to human relations. Public school systems in the nation have not begun to cope with the question of how to convey traditional American political and cultural values to the new immigrants, who come to us from authoritarian societies.

Urban centers face other, more obvious dilemmas. Transportation infrastructure. With the flight of businesses to the suburbs, along with the middle class, how can the workforce, which will be in in the city, be linked with jobs, which are and will be in suburban locations? The decayed nature of the housing stock may well by the most striking aspect of our urban condition.

It may seem contradictory, but housing and transportation may well by the easiest urban problems to address. These require only the will to make change . . and the money. The development of human talent in the urban setting will offer the most complex challenges. Perhaps the greatest single task of the urban university over the next two decades will be in the preparation of the next generation of teachers. As the majority of today's public school teachers retire, a new generation must be prepared to cope with a complex set of challenges, and to extract the opportunities they mask. In the process, we will have to reconceptualize how we educate our teachers. Teacher education has remained virtually unchanged since the decade of the thirties. The curriculum is now out of phase with the realities of our streets, classrooms, and economies.

Future Students

We speculate about the future as if there is some mystery. Incredibly enough, the future is all around us. An educator should be able to visit the future at will. The University of the District of Columbia's (UDC) class of 2004, the entering freshman

class of the year 2000, is now finishing first grade. Thus, we can visit our future, listen to them, get a sense of their early aspirations and see them. The UDC class of 2004 is already taking shape, and they are not very different from the freshmen who will enter urban universities in New York, Chicago, Philadelphia, Lost Angeles or Baltimore in 2000. About 24% live below the poverty line. Over one-third are non-white, and far fewer are suburban middle class children than in 1970. Many speak Spanish and other languages. About 18% are born out of wedlock, and 45% will be raised by a single parent. About 65% have working mothers and will have experience in daycare. Handicapped people will continue to strive for self-sufficiency. So those with physical and emotional handicaps will become ever more visible in higher education.

Elite institutions will be able to sidestep these challenges. Urban institutions will not want to. The "environmental interference" our urban students will overcome to move from first grade to our freshman class in the year 2000 will leave scars in the form of uneven levels of readiness for college. We already see this as we cope with remediation, developmental education, or whatever we may call "educational damage control." These needs will become greater and more complex even if educational reform sweeps the land. The students will bring us diverse learning styles, values, and cultural roots. The only constant will be the task before us. Urban universities will have to provide all the assumed professional skills, plus an ability to cope with change, compete in a global economy, and conduct cross-cultural transactions.

The Urban University

Much of our discussion has focused upon environmental factors, rather than the nature of urban universities. This is because our urban institutions differ from elite and selective counterparts in one respect. The latter can select the challenges they accept. They can raise the SAT entry requirements to eliminate remedial problems, raise tuition to generate revenue, or change the graduate-undergraduate mix to get "better" students. Urban universities accept the challenges presented by the urban environment. Our route to excellence is paved by our ability to anticipate and analyze urban needs. To a very large degree our success as a nation will be determined by the success of our urban universities. Historically bypassed populations will comprise one-third of our workforce in the next century. And these populations, and the schools they attend, will be largely served by urban universities. If we fail to bring this third of the nation into the economic mainstream, and to create a new generation of resourceful urban public school teachers in the process, our nation will simply not remain economically productive or competitive. But this will not happen. Our track record promises success, despite the turbulence we might experience. A surprising source confirms this. On March 15, 1989, the New York Times noted that "American universities are not good because the United States is rich. America is rich because it has good universities." That unsolicited comment came from an interview with the rector of a Soviet state university.

**Vaughan:**
I like the manner in which Dr. Cortada defined an urban university - - in terms of mission rather than location. I would add, however, that being located in an urban area has an impact on a university that often goes beyond the formal curriculum.

The impact is often social and political, i.e., the urban university must interact with its environment. The question is how much and in what manner.

Certainly our speaker outlined a number of national needs to which urban universities must respond if our nation is to compete successfully in the world market. We must, as he suggests, rebuild capital resources and find new and more effective ways of developing human resources.

I like what our speaker says about the role of the urban universities in developing the next generation of teachers, of role models for urban youth. A just completed study of the community college presidency shows that minority and female presidents expressed a strong need for role models. Can you imagine then how great the need for role models for inner-city high school students must be?

The observation that urban universities must accept the challenges presented by the environment places the university squarely in the middle of the action, a most appropriate location.

What are the implications for urban community colleges? Community colleges obviously face many of the same challenges and opportunities as urban universities. But in some ways, such as the development of human resources, the community college faces even greater challenges than the university. The following facts may place the community college role in perspective:

1. Over 50% of all first-time college freshmen are enrolled in community colleges.
2. Over 40%, of Blacks, Hispanics, and native Americans who go to college enrol in a community college.
3. Miami-Dade Community College enrolls the largest number of international students of any college or university in the nation.
4. One out of every twelve college students in the nation is enrolled in a California community college.

So what is the challenge for community colleges? Some challenges include the continuation of offering developmental education and devotion of resources to English as a second language programs.

If urban community colleges are going to have a major and lasting impact on the urban scene, community college leaders must place a great deal more emphasis on preparing students for successfully transferring to the urban universities and other four-year institutions. We in the community college have been so swept up in preparing students to get a job that we have often spent too little time asking what kind of job.

If urban youth are to achieve their potential to be teachers, lawyers or engineers, the community college must not lose sight of the fact that the bachelor's degree, has been, is, and will be the stepping stone to positions of leadership and to the professions. By failing to place major emphasis on the transfer function, community colleges are denying many urban youths the opportunity to reach their potential. To fail in the transfer function is to fail to provide the urban university an important source of bright, ambitious, and deserving students, a failure that neither the community college, the urban university, nor society can afford.

***Commentator: Bissonnette***

*Dr. Cortada's remarks centered on defining the urban institution in terms of mission and role, describing the "urban condition" and national pressures and needs which impact on the priorities and agenda for higher education, and presenting the challenges posed to urban higher education in meeting these needs by certain social and demographic conditions. Dr. Cortada suggested that the greatest single task of urban universities over the next twenty years will be the preparation of the next generation of teachers. He concluded that, to a large degree, the success of the nation will be determined by the success of the urban universities in preparing historically bypassed populations to assume one-third of a competent and educated workforce.*

*According to Dr. Cortada, an institution is "urban" not by mere geography but "through the priorities and values they elect." Specifically, Cortada contends that, to be truly "urban", an institution's mission must be intensely focused upon the potential of urban students, its research centered around urban policy and problems, and its faculty involved with the surrounding community. Given this perspective, the role of the urban institution is defined to a large degree by the challenges presented to and by the urban environment.*

*Even before strictly urban needs can be considered, says Dr. Cortada, national pressures and needs will dictate priorities and agenda for colleges and universities. First a competent, educable workforce with a restored work ethic must be developed. This challenge impacts particularly on urban institutions which serve lower income populations. These populations typically have higher attrition at the public school level and weaker basic skills. The current increases in immigration rates add further to this problem. Second, in order to maintain its international competitiveness, the U.S. must retain and graduate more students in technical fields and in areas of shortages. This effort cannot succeed, according to Cortada, unless minority and urban populations are better served by urban colleges and universities. Finally, the nation faces rebuilding in capital and human resource areas. The urban capital infrastructure is decayed and technical manpower is needed to orchestrate the planning, funding, and management of rebuilding. Urban public school systems need rebuilding as well. Therefore, education - - elementary through higher education - - must accept these challenges and succeed in meeting them in order for the nation to succeed and be competitive.*

*Dr. Cortada contends that the "urban crisis" of the '70's is the state of affairs of the '80's and '90's. While progress has been made, the conditions must continue to be addressed. Drug traffic, street violence, homelessness, and overcrowded prisons continue to drain human and financial resources. Cities are becoming racially and economically isolated. Problems associated with cultural relations among minorities and conveying American political and cultural values to immigrants from authoritarian societies are particular issues cited.*

*Perhaps the issue most strongly emphasized by Dr. Cortada is the responsibility of the educational community to prepare itself to provide the education necessary and appropriate for the freshman class of the year 2000, the class now in the first grade.*

*For large urban centers, this "future" presents serious challenges and Cortada lists several based on the demographics of the projected UDC class of 2004. To urban colleges and universities, these students will bring with them an uneven readiness for college, therefore increasing the need for developmental education. These students will also bring diverse learning styles, values, and cultural roots to which higher education must adapt in order to be effective. For these students, Cortada suggests that, "(u)rban universities will have to provide all the assumed professional skills, plus an ability to cope with change, compete in a global economy, and conduct cross cultural transactions."*

*In his reaction, Dr. Vaughan reiterates the need for finding new and more effective ways of developing human resources. In responding to the role of urban universities in developing the next generation of teachers, Dr. Vaughan emphasized the need for role models among urban youth. In terms of the implications of the challenges presented to community colleges specifically, Dr. Vaughan suggests that community colleges must continue to offer developmental education and to devote resources to progams such as English as a second language. Dr. Vaughan emphasized, however, that if community colleges are to have a major and lasting impact on the urban scene, more emphasis must be placed on preparing students to transfer successfully to the urban universities and other four-year institutions, ". . .the bachelor's degree has been, is and will be the stepping stone to positions of leadership and the professions."*

*While Drs. Cortada and Vaughan provide separate statements from different perspectives, one message is clear: our world is changing rapidly and higher education must recognize the change, monitor it, plan for it, and adapt appropriately in order to be effective in preparing itself and its students for the future. Through its students - - the educational, political, and business leaders of tomorrow - - the educational community as a whole has the opportunity to have an impact on that change and its own future world. The students in the freshman class of 2000 will not be products of 1950's families and environments as value systems, nor will they be preparing for jobs and careers as we have known before and know today. They will be products of a different era and preparing for life in the 21st century. The educational community - - elementary through higher education - - must now deliberately prepare, plan and adapt to meet the needs of these students and their time. To put it into the jargon of the '80's, we must scan our environment, identify the threats and opportunities - - the emerging issues, and plan strategically. If we do not do so, we will be forced to react when we find ourselves out of phase with the needs of our students and their world. The educational community has a choice: it can work now to plan and develop its future directions and the future of its nation and world, or it can ignore these challenges - - act only for the present - - and have its future dictated to it by a world over which it has affected little influence.*

*Dr. Cortada's final statement provides some encouragement. In speaking of the relationship between education and the economic productivity and competitiveness of the nation, he says, "Our track record promises success, despite the turbulence we might experience." He goes on to quote an article in the March 15, 1989 New York Times in which the rector of a Soviet state university notes that, "American universities are not good because the United States is rich. America is rich because it has good universities." Our challenge is to prepare ourselves and our students to continue this "tradition" through the 21st century and beyond.*

**Is There a Better Way to Manage Higher Education?**
**(presidential session)**

**Lawrence A. Sherr,**
**Chancellors Club Teaching Professor and Professor of Business Administration,**
**University of Kansas**

**(This is an edited record of an address presented in the Calvert Ballroom, of the Lord Baltimore Hotel, in Baltimore, Maryland, on Wednesday morning, May 3, 1989.)**

"Is there a better way to manage higher education?" was the question put to me. In thinking about this I must admit that the thought crossed my mind more than once that what I should do, but I won't, is stand up here and say in a rather deep voice, "Is there a better way to manage higher education?" stop for a pause, and give a deliberate and scholarly "yes", and then ask for questions. My hunch is that's not what you came for. I will try to keep my remarks interesting and brief, but it should not surprise you that my answer to that question is "yes" and I'm going to do my best to defend that position over the next few minutes.

There may be another question on your minds, a question that struck me in hearing some of the speakers this week, and that question is, "Is there a future for institutional researchers?" My answer to that question is "yes", and in fact you will find that the main purpose behind my talk is to carve out my position on what institutional research needs to be doing in the future to not only help our institutions survive, but thrive.

Let me look ahead to where I'm going so you will know when to listen carefully and when to take a snooze as the case may be. I'm going to present some rather strange ideas. Strange may be a nice way of putting it. Other people call it novel; some believe that in what I'm about to say, I'm committing heresy. I'm going to present strange ideas about higher education and what it's capable of doing, and how it's not doing it. Specifically, I want to present some ideas about the role that I personally would like to see institutional research play in the future.

I'm going to begin in what might appear to be an awkward way. I'm going to begin with my conclusion. I want to see institutional researchers continue their own education and share their knowledge with both the managers and the staff of our colleges and universities. I see you in the future not only as presenters of numbers but rather people who are consultants in solving problems. Today I will deal with what those problems are, and how to attack them.

In preparing for this talk, I looked over your agenda, the Chronicle of Higher Education, and some other academic publications. I want to share with you some words that I found: strategic planning, enrollment management, data administration, fund raising, management information systems, conflict management, labor market information, cost analyses, cost studies, relational data bases, managing change, environmental scanning, marketing, and market research. As a professor, one who went into this business because he loves to teach, I can't help but ask several

questions: What does this have to do with my life? How does most of this affect me and help me in teaching, whether it be my undergraduate statistics course or working on my research or with my Ph.D. students? I'm struck by how little of this agenda is dealing with what I'm going to call "the improvement of operations", or how to more effectively use the resources that we do have available to us today.

Perhaps the following is the most important observation. As a professor of business who is lucky enough to spend a portion of his life not only in the ivory tower, but out there in the business community, I can't help but wonder what would happen if I read that list to some of the people that I work with in business, carefully editing that list to remove words like enrollment or admissions. If I asked: "Where do you think this list came from?", I think they would probably respond by saying that it came from a business forum, not an academic one. I want to posit a thesis that you may or may not agree with: the methods we use to manage our institutions are copied directly from America's large corporations. Some of you may be aware of that. I'm sure many leaders of higher education would deny that, but I can assure you that virtually every one of these terms has its roots in one of America's Fortune 500 companies. We are following methods we have rarely developed but rather imitated from another part of our society. I want to take a look at just how well those business institutions are doing because, to put it bluntly, I think whether consciously or unconsciously, we are imitating institutions that do not have the track record to deserve that imitation.

Let me begin by asking you some questions. How many of you own automobiles? Raise your hands, please? Feel free to raise two. How many of you own automobiles that are not made by an American manufacturer? Nationally, that is a third of the audience. In this room I suspect that it is a little bit more. How many of you bought a TV in the last six years? How many of you bought Zeniths? The rest of your's were made by non-American manufacturers. How many of you have a VCR? None of them are made here. How many of your offices have copy equipment? How many have the name Xerox on them? That was a monopoly fifteen years ago.

I would like you to imagine that today is not May 3, 1989, but May 3, 1969, and somebody came before you that is a lot smarter than I am, and that person made the following projections: In the next twenty years the following companies would be in trouble: General Motors, U.S. Steel, Xerox, as well as industries such as textiles and electronics. Further, someone in the U.S. would discover something called the "chip" and that industry itself would now be in trouble in the U.S. Finally what would you think if you were also told that companies such as IBM and Eastman Kodak had to completely reorganize their business structure. Given these projections, I would think that person was out of his/her mind.

I want to review some statistics with you because it is important that we recognize the record of these companies whose methods we are using and then say, "Perhaps we should be using somebody else's methods."

Computer chips: In 1980, the United States had a 60% share of chips produced and sold on the world market. Now we are at just a little over 10%.

Automobiles: In 1966, 7% imports. Today it is 30% imports. General Motors in 1980 had a 54% market share and was a low-cost producer. Today its market share is 36% and dropping and it is a high-cost producer.

Construction equipment: In 1966, five of the world's largest construction companies were American. Today it's one in five.

Steel: In 1980, there were 291,000 steel workers, today 121,000.

We believe we are no longer a manufacturing country. We are into services. But we still are a manufacturing country. What has happened is that we have gone from large corporations to smaller ones who manage themselves better, providing fewer jobs.

Second, services pay a lot less. But our record in services is nothing to be proud of. This is rather surprising. In 1976 nine of the largest banks in the world were American. Today it is one in ten. But perhaps even more surprising, to give you an idea of our record in services, only four of the top fifty banks in the world are U.S. and all four of those banks are in the red.

Why is this so? American management blames it on American labor. Labor blames it on management. That's like the old western movies. They went that-a-way. I want you to notice though that is not unlike what we hear in higher education. How many administrators, presidents and others complain about the faculty and staff?

I want to show you some examples of how nonsensical these excuses are. Let me take two case histories:

Case History #1: In the early 1980's, the Motorola Chicago plant had over 1,000 blue collar employees and 600 indirect employees. Notice that ratio - - 600 to 1,000. One thousand television sets per day were made requiring 1.3 repairs per television. The annual warranty costs were $16 million. To put it another way, they did not know how to make a television set that worked. The Japanese company, Mitshusta, purchased the company. Two years later, there were still 1,000 blue collar workers. The original 600 indirect employees was now 306, including six Japanese managers. They made 2,000 television sets per day rather than 1,000 sets. Required repairs went from 1.3 per TV down to 0.06. That is six mistakes per 100. Today they are down to three mistakes per hundred and these television sets are being exported to places like Japan. To give the final punch line, their annual warranty costs went down to $2 million but note that is based on a production that is twice as big as before.

This change was done without automation. It was done with American workers, without cultural homogeneity. I refuse to believe it is the American workers' fault. Now that should encourage us all.

Case History #2: In 1980, while the U.S. government was bailing Chrysler out of its problems, Ford Motor Company was not far away from asking for the same thing. In 1980 they lost $1.545 billion. By 1986, they reduced their operating costs $12 million per day. And, according to independent observers including you and I, Ford is building a car that we perceive to be the best quality car made in the U.S. Ford went from a loss of $1.545 billion in 1980 to a 1988 profit of $5.36 billion, something larger than General Motors on two-thirds of their asset base. Ford had a return on capital of 24%.

How did they do it? I want to point out that Ford did it not only with American workers but with American managers.

The problem is not the people. The problem is the methods they used. It is the management system. Something has gone wrong in these organizations and I'm going to claim that the same thing is going wrong in higher education. Somehow or other, these organizations in their actions, and I want to differentiate between the actions they take and the words they speak - - somehow or other, in their actions, they forgot three very simple but important principles: (1) The most important part of any organization is its customer; (2) In order to attract new customers and hold old customers, you have to satisfy their needs; (3) You can't satisfy their needs unless you know what their needs are.

What does that have to do with higher education? I believe that very few of our institutions have any idea of who our customers are. And again I want to separate the rhetoric from the action. I don't hold any of you present today responsible for this because this agenda is really set by the people that you report to, who tell you what you should be interested in. The only reference to students, for instance, I can find in the AIR program is to undergraduate students and those references are few and far between. I know there are people here from junior colleges, and people here from four-year colleges where that reference to undergraduate students makes sense. However, I also know that there are people here who are not from those institutions but rather from graduate institutions where there are other kinds of students. What I find from my own experience in a comprehensive institution is how the talk about the importance of undergraduate education differs from actual practices.

I believe that we behave no differently than many current business institutions. Somehow or other we have lost our way. We don't know who our customers are. How did this happen? We like to find excuses. We like to blame people and we in higher education, I claim, are just as guilty of doing that as any business leader I have met.

When looking for answers, I suggest we look at Japan because they have been so successful in making an impact on those of us in the United States. Who does Japan credit for it's success? This will surprise many if you haven't heard this story before.

Since 1952, the Japanese Union of Scientists, in conjunction with the Japanese government, has made a series of annual awards for those firms that have done the most to increase the quality of their product. That award is called the W. Edwards Deming Prize.

Who is Dr. Deming? Dr. Deming is an eighty-eight year old American college professor teaching statistics. He, and many of his colleagues, developed statistical quality control methods in the 1930's, mostly at AT & T, some at the Bureau of the Census, that were applied and used during World War II. After the war, these same people (although Deming gets a lot of credit, there are many others who deserve credit, like Juran) approached some of the companies I referred to earlier and offered to help them. They were politely told "Goodbye." Somebody on General MacArthur's staff recognized that this was just the answer that the Japanese needed to rebuild their economy. They invited these people over to Japan. The Japanese

adopted the methods I want to talk about, and share with you today. It took the Japanese thirty years to succeed.

Why do so many of you own non-U.S. cars? May I suggest an answer with which most of you will agree? The car is of higher quality. Is that right? The interesting thing today is that not only is it of higher quality, but does it cost you more or less to buy? It costs you more to buy a Japanese car today than a U.S. car. They originally came over on a price basis that was lower but today we Americans are willing to pay a premium price for that quality.

What you may not know is that not only is that quality higher in the sense of less defects, less breakdowns, less warranty costs, numbers that can be easily measured, but also what you may not know is the most significant fact, - - they produce those cars, higher quality cars, at a lower cost to the company. You talk about being in a neat market. You are making a higher quality product at a lower cost to yourself for which the customers are willing to pay a premium.

In Deming's book, Out of the Crisis, he argues that management has fourteen obligations that they need to meet to run their firms. I will highlight several of them. I will try to use his words, where appropriate, and sometimes change those words so they better fit the education audience since he was often writing for manufacturing.

Point one is to create a constancy of purpose toward improvement of product and service with the aim to become competitive, stay in business, and provide jobs. I want to emphasize two phrases: "create constancy of purpose." Decide what your business is and stay in it. A nice example of this is a computer game called Nintendo. Atari brought computer games to us over ten years ago. When Atari decided to get out of that industry, the Japanese firm, Nintendo, got in and they improved it until now it is the best-selling Christmas game.

Constancy of purpose, I will argue, is also needed in higher education. At my institution we have a program that we have been proud of for over twenty years. When I first came to the University of Kansas every undergraduate was required to take a one-year course in western civilization. As the university grew larger and larger, it became necessary, unfortunately, to reduce the requirement until today it is required only for people receiving BAs but that means that over 1,000 go through it every year. I don't want to pick on the University of Kansas but it just happens that I have more knowledge of it than other places, and I am proud of that institution or I would not be here, or there today, I assure you. Over the last ten years we have changed the way we teach that course three times. We recognize "it's broke" so we put in a brand new process. We give it two or three years, we recognize "its broke," and we put in a brand new process. What we need in higher education is constancy of purpose - - not putting in new processes, but improving the processes we have.

What are these purposes? We need to satisfy what they are. I doubt that many of our institutions really know who our customers are. I honestly am not sure. I can give you quite a good debate, at my institution, as to whether or not my students are my customer or my raw material. You could argue they are both, but I have a hard time, honestly, and I do not want to dwell on this right now, saying that a nineteen year old is my customer. It may be that when he or she is thirty years old and they look back on their educations, they are my customer, but it is a subject matter to

which we do not give enough attention. I am not here giving answers today but raising questions.

We need to understand what our purposes are. How many of your institutions have mission statements? How many of you know your mission statements? How many of the employees at your institution know your mission statement? If we don't have a mission statement that is a living document, how are we going to make things work?

I want to share with you two stories along these lines to make my point. You recall the terrible incident involving the Tylenol cyanide scare. I don't know if you are aware of who it was in that company that made the decision to pull all Tylenol from shelves around the world. While the president and top executives of Johnson and Johnson were in a meeting frantically trying to figure out what to do, the U.S. materials manager made the decision. He could not work for that company for twenty years and not recognize Johnson and Johnson's true commitment. If you look at their record, they are proud of their commitment to sell products that make people well, not kill them. And without any fear or apparent hesitation, this individual removed the company's best-selling product from shelves worldwide.

That is why I talk about the importance of a mission statement. If you have a mission statement that is clearly articulated, that people buy into, you can trust your employees to make intelligent decisions.

I want to share with you the mission statement for Ford Motor Company:

*Ford Motor Company is a worldwide leader in automotive and automotive-related products and services as well as in newer industries such as aerospace, communication, and financial services. Our mission is to improve continually our products and services to meet our customer's needs, allowing us to prosper as a business and to provide a reasonable return for our stockholders, the owners of our business.*

***VALUES:*** *How we accomplish our mission is as important as the mission itself. Fundamental to success for the Company are these basic values:* ***People.*** *Our people are the source of our strength. They provide our corporate intelligence and determine our reputation and vitality. Involvement and team work are our core human values.* ***Products.*** *Our products are the end result of our efforts, and they should be the best in serving customers worldwide. As our products are viewed, so are we viewed.* ***Profits.*** *Profits are the ultimate measure of how efficiently we provide customers with the best products for their needs. Profits are required to survive and grow.*

***GUIDING PRINCIPLES:*** ***Quality comes first.*** *To achieve customer satisfaction, the quality of our products and services must be our number one priority.* ***Customers are the focus of everything we do.*** *Our work must be done with our customers in mind, providing better products and services than our competitors.* ***Continuous improvement is essential to our success.*** *We must strive for excellence in everything we do: in our products, in their safety and value; and in our services, our human relations, our competitiveness, and our profitability.* ***Employee involvement is our way of life.*** *We are a team. We must treat each other with trust and respect.* ***Dealers and suppliers are our partners.*** *The Company*

*must maintain mutually beneficial relationships with dealers, suppliers, and our other business associates. **Integrity is never compromised.** The conduct of our Company worldwide must be pursued in a manner that is socially responsible and commands respect for its integrity and for its positive contributions to society. Our doors are open to men and women alike without discrimination and without regard to ethnic origin or personal beliefs.*

I would be proud to work for a university that made most of those statements, and I can tell you that Ford has training programs for every new employee so that everyone from the janitor to the new vice president knows the mission of the company.

In the early 1980's, NBC had a white paper on TV: "If Japan Can, Why Can't We?" That was a one-hour program about Deming's work. Donald Peterson, president of Ford, saw that program and the next morning he called Dr. Deming. As they say, the rest is history.

Point two suggests that we adopt a new philosophy. We are in a new economic age. Western management must awaken to the challenge. Learn responsibilities and take on leadership for change. The track record is in. Give an American consumer a choice where they can buy something of high quality, and they will buy it over something of lower quality. They will no longer live with old fashioned ways, mistakes, defective materials, and poor workmanship. Given the choice, they will take quality. That's part of this new economic age.

The second part of this new economic age, which is almost anti-American, is the fact that quality does not necessarily cost more. Previously I mentioned that the high quality producers are producing at a lower cost to the firm. Why? Studies have shown in manufacturing, that between 10% to 40% of the cost of goods sold, that is the cost to the firm to actually make this material, is in scrap and rework. I have done a lot of consulting in service organizations and although I cannot back up my view with figures as I can in the manufacturing sector, it is my belief that the scrap and rework in service organizations, including universities and colleges, is even higher.

I don't like to make the analogy of scrap and rework to students failing and dropping out, but it's true. Let me also make the analogy to the meetings you go to where you know you discussed the same thing the week before and the week before and the week before. Quality does not necessarily cost more, it costs less. And that clearly is heresy, and I would hate to have this get out of the room, but I am not convinced we don't have enough money to do our job - - I question how well we use our resources to do that job.

George Johnson, president of George Mason University, made a powerful statement earlier in this conference. In response to "How does the American consumer view higher education?", he said the American public saw us as overpriced, underperforming, and possibly corrupt. If I'm going to disagree at all with President Johnson it is with the word "possibly." That's not much different than the way American consumers saw General Motors in 1980 and look what they did.

We have a significant competitor. In fact I have a request for AIR. I think the time has come for a nationwide study to find out just how much the significant competitor is

spending on American education. Do you know who that competitor is? Business. Not just on remedial education, not just on training, you would be surprised at the amount of real graduate-level education that is going on, not only in management but in the sciences. I would like to see that data.

As a student of business, I am amazed at how long it took the American automobile manufacturers to wake up to this slow rise from 8% of imports up to almost a third. I suspect we have our heads in the sand as much as they did. People are very unhappy with us and are setting up their own programs. They are unhappy with our inefficiency, our costs, and our training time.

Point three says that we should cease dependency on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place. Cross pens - - fine pens, right? Cross pens are individually inspected. The return rate is two out of every hundred. You cannot inspect quality in. At the end of somebody's education, it is too late to change them. If you want quality, you have to move upstream.

To illustrate this point, let me use the example provided in Gitlow and Gitlow's book The Deming Guide to Quality and Competitive Position. The story goes as follows: When IBM heard about the way the Japanese made computer chips, they decided to order 10,000 chips in which the order clearly specified no more than three defective chips for that batch, they thought that was a virtually impossible goal. As the story goes, the chips arrived in a box with a letter on top. The letter said something along these lines: "We don't understand you Western business people, but we satisfied your request. In the box are your 10,000 chips. The three defective ones are in the manila envelope."

I think we should follow their methods, not ours. They are that sure of what they are doing, that by using quality inputs, quality materials, quality people who are well trained and committed to doing their job, by using statistical sampling upstream, early in the process, it is unnecessary to inspect at the end.

What is the relevance to higher education? Accreditation has been inspection. The public has told us it failed. Assessment is a new kind of inspection. In my view it will fail if all it is is a final assessment.

We know we are not doing that good a job. In fact, what I am sure all too many of our institutions are going to do with assessment is say, "Yup, there's no question about it. Higher education isn't doing that good a job - - - except at my school." We have used accreditation as a device to raise money. In my view, assessment will go the same way because you cannot inspect quality in. You have to look at the situation from another point of view. We have to take a process approach.

Deming's fourth point. We must end the process of awarding business on the basis of price tag. Instead, minimize total cost. Move towards a single supplier for one item for a long-term relationship with loyalty and trust. The key in business is - - don't use low cost raw material. Don't put your suppliers in competition with each other to bid for the lowest cost because the lowest cost is likely to be junk and that piece of junk is going to wreck your finished goods. That applies a little to some of our institutions who are forced to go out for competitive bids but I think what's more

applicable is the thrust of all this. The thrust of this is not the single supplier but the thrust of this is to make sure that the materials we work with are of the highest quality.

Let's go back to that undergraduate student from the United States educational system. I think all of you will agree that one of the roles that the undergraduate plays is that he or she is our raw material - - may or may not be our current consumer, that's debatable, but those are the people who come into the system. I don't need to belabor you with the sad state of education in the United States. But I ask the leaders of higher education institutions, and let me assure you I've asked mine many times, to the point that they are sick and tired of seeing me, "When are we, the flagship of the system, going to address the problem in K through 12?" While everyone agrees there are problems, they do not find them at their schools. They say they are happening elsewhere. We faculty know where they're going, because we complain about it too much, because we're just as guilty, we like to blame people also.

Again, I think it was President Johnson who made the observation that universities are very willing to help society solve all kinds of problems, we will help them with their infrastructure, advise them on this, advise them on that. Why don't we get together and advise them on what we are supposed to know about, what we're doing, about education? Until we tackle the problems of K through 12, we can't really improve our ability. If our raw materials are poor, we're inevitably going to have lots of scrap, lots of rework. Those are the names I prefer to use rather than attrition studies because they are probably more to the point.

Point five. Improve quality. Improve constantly and forever the system of production and service. Improve quality and productivity, thus constantly decreasing costs. It is management's responsibility to find problems, management must work continually on the system.

This is where institutional research fits in. The AIR summer institute will be involved in the statistical methods of quality control and how it applies to higher education. I have found that as American businesses have awakened to this, they have turned to people like me for advice on how to manage their problems. Now what we give them is a new statistical tool. By the way, that is new to them, but known to statisticians since the 1930's; in fact, ignored by most of us, not taught in business schools at all during the 1960's, 1970's and most of the 1980's.

These tools are the ones you need to learn about. You need to find out about cause and effect fish bone diagrams. You need to find out about Pareto charts. You need to learn something about statistical variation when it is put in terms of a process, rather than in a static environment. You will find a lot of that in Deming's book. These are the tools that we need to improve our processes.

A simple example may help explain this perspective: A young woman comes into your office complaining about a graduate teaching assistant (GTA) for her class who has just asked her for a date. Our reaction is to attack the symptom of the problem. We'll bring that GTA in, we'll talk it over with the woman involved, we'll quiet the situation down. But is not the lesson to be learned here that what has happened is evidence of very poor training of GTA's? We have to start treating the cause of our problem, not the symptom. The statistical methods are designed to show which are

the symptoms that most likely have causes. Your special responsibility in institutional research is to move more in the direction where you can present, through the dean to the president, the cause of the problem, so that the action that follows is obvious. It is not action built on emotion but on data.

I would like to read something now that was written by a graduate student at the University of Kansas to the editor of the University Daily Kansan. The Wescoe Hall referred to is a building that has a wide-open concrete area where everybody likes to sit on a sunny day.

"There is a man who spends several hours a day around Wescoe Hall, noisily rearranging leaves and refuse on the stairs and walkways. He does this with a gas powered machine strapped to his back that seems to operate on the principle of a vacuum cleaner in reverse. It's often hard to concentrate when he's nearby, whether the object is study, conversation, or some quiet time. It's not the noise I object to, I object to this man's job.

I'm sure he's paid well. At least I hope he is. For all he has to put up with, he should make $25 an hour. It's the person who assigned him the job that should be fired.

The man who is blowing leaves around Wescoe is a teacher. He's teaching us what we want to know. We want to know that problems are not to be solved but to be relocated. Is there a pile of trash on the steps? Don't pick it up, blow it away. Let somebody else deal with it. Of course, nobody will, since tomorrow the same trash has to be dealt with all over again. Naturally it looks different and it is in a different place so we think it's a different problem."

Think about those words. The time has come for us to stop addressing the symptoms and get to the root of the cause. Those of you with a little background in statistical quality control, we have to get rid of our assignable causes. We do that one by one. The Japanese took thirty years to improve their product. Donald Peterson has been at it for seven years. He doesn't believe he's halfway there. There is no magic wand. It's a long journey.

Ellen Chaffee came up with a term that I like very much. "We should take quality not as a noun, but as a verb." That is the way to the goal that we are constantly striving for. The second you become complacent and think you're there, somebody will beat you out.

The remainder of Dr. Deming's points all involve vigorous human relations. I am just going to read some of the highlights to you. I claim that we in the academic world are not treated much better than the mythical industrial employee. Point 6: Institute training on the job. Ours is awful. Point 7: Institute leadership. The aim of leadership should be to help people, machines, and gadgets do a better job. Supervision of management is in need of an overhaul as well as supervision of production employees and although I do not like to think of myself as one, I know that is what I am. When I came into this business, I thought I was a junior partner. I think somewhere about fifteen years ago I became a partner. Today I feel like an employee.

Point eight suggests that fear be driven out so everyone may work effectively in the company. How many people in your institution could do what that materials manager did at Johnson and Johnson without being worried? Point 9 says break down barriers between departments. People in research, design, sales, and production must work as a team. People from the academic and administrative sides must work as a team. People in admissions and institutional research must work as a team. One school or part of a university must work as a team. If not, we just have lots of events that cause agenda items. You have one called conflict management.

Let me introduce something that is very important. In looking at the process you will discover that you also have internal customers. Each of you is an internal supplier and an internal customer. Until we co-operate in such a way that we know the needs of our internal customers and satisfy them, we are certainly never going to satisfy the needs of our external customers. One of the questions people always ask is, "How can I begin without presidential support?" My answer is, "Find out who you are a customer of and be a better customer; find out who you supply and be a better supplier." This will only begin one step at a time. In fact, I am kind of happy it does. I think that if we had some magic wand to change the whole thing, we could change it all and a year later be unhappy with it. We should take it one step at a time.

Point ten suggests an elimination of slogans, exhortations, and targets in the workforce that have zero effect on levels of productivity without providing the means. Stop telling faculty that undergraduate education is important without giving the means to do the job.

Point eleven says eliminate work standards and quotas (I'll call it formula budget) on the factory floor. Substitute leadership. Eliminate management by objectives, management by numbers, management by numerical goal. Substitute leadership.

Point twelve tells us to remove the barriers that rob the hourly man and woman from pride in their work. How many of our people in our universities do not know how their job fits into the system? How many classified employees believe that if they were absent today the place would run just fine? And if they believe that, and if that is true, maybe that is an unnecessary job or maybe a job that needs redesigning.

Point thirteen tells us to institute a vigorous program of education. I know of no other part of our society that shows less interest in educating its employees than universities and colleges. To your credit, you said "Yes, and we're going to do it ourselves. We'll establish AIR, run our own forums, our own institutes, because you know, it's not that available at home."

Point fourteen. Put everybody in the organization to work to accomplish this transformation - - it's everybody's job. Your job in institutional research is not unlike the job of my colleagues in business - - consultants. What I am asking you as institutional researchers to do is to learn more about this. I am asking you to become more than people who present numbers, but rather people who present formulated problems with data. I am asking you to learn and then to educate. Educate the best you can whichever manager you see in sight who is willing to learn. It would be nice if it were your president but if it happens to be a dean or the department chair, it will work. The only way this has worked in organizations is to find a core group that is interested and start using it.

What we need to do in higher education, in my opinion, is to figure out who our customers are and do what Ford and others have done: make a commitment to excellence. I really mean the word commitment. Not just talk, but actions. A commitment to excellence throughout the entire organization. Everybody counts. Work to better satisfy the needs of all our customers in the organization today and tomorrow.

I appreciate the opportunity to share these thoughts with you. I hope that some of you will take this to heart and read the recommended book. Is there a better way of managing higher education? There better be. I think there is, and I think some of the model is available to us. Let's take a look at it. The answer is "yes."

## AIR PUBLICATIONS

AIR publishes or sponsors a number of items on a regular basis and others on an occasional or one-time basis. Some are written and/or printed in-house; others are produced by publishing houses. A brief list appears below:

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Research in Higher Education
New Directions for Institutional Research
Higher Education: Handbook of Theory and Research
AIR Professional File
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AIR Newsletter
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**Monographs**

The Functions of Institutional Research
A Primer on Institutional Research

**Other**

ERIC Collection

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